NAEB

TV Engineering Newsletter

NATIONAL ASSOCIATION OF EDUCATIONAL BROADCASTERS

14 Gregory Hall Urbana, Illinois Phone 7-6611, Ext. 3394

NAEB ENGINEERING NEWSLETTER No.1

Well here it is! Issue No.1 of the NAEB ENGINEERING NEWSLETTER.

The first week in January we mailed a card questionnaire to all member and Associate member stations of NAEB seeking the names of those chief engineers we did not know. The response was very gratifying and now we have a mailing list of over 100 chief engineers of educational radio and TV stations. And practically all of them wanted to receive an engineering newsletter.

Perhaps this first issue will be disappointing - maybe it will be what you want - at any rate it's a beginning. If you have some ideas on what it should contain, we'd be happy to have them. My feeling is that it should, and can be, a medium for the exchange of information of interest to technical personnel. We'll welcome your contributions to it and publish your articles so that others can benefit by your experiences. If there's something you want to know, possibly one of our readers may have the answer and by publishing your question you may be able to get the solution.

As a starter, we thought we'd collect the material of interest to engineers from the regular NAEB Newsletter. Perhaps a few of you have read them, but I'm sure many of you have not. We'll be starting with the 1954 TV Engineering Workshop program. Many of you did not hear of it in time to apply. We are happy to announce that a grant has been made by the Fund for Adult Education which will enable us to hold the 1955 TV Engineering Workshop. Plans for it are already being made so be on the lookout for an announcement of it later.

We're mailing this initial issue to all who returned our questionnaire cards. Those who asked for more cards will be receiving them soon. Will you PLEASE pass this copy around so that it is seen by your entire technical staff even those at the transmitter, sometimes they're forgotten when things like this reach the studio. You can also be of help to us by noting if we have this correctly addressed to you. If we haven't will you please send us a two-cent postcard saying "This is my correct address" and be sure to print or type it so we can read it. Then we'll be sure to reach you without delay.

We want to be of service to you. Send us your comments, suggestions, news items, problems, list of equipment you need, surplus equipment for sale and we'll do our best. If there's enough material to make this a monthly publication instead of bi-monthly we'll change our plans.

Cecil S. Bidlack

Cecil S. Bidlack
February 10, 1955

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NAEB EDUCATIONAL TV ENGINEERING WORKSHOP PROGRAM SET

The final program for the NAEB Educational Television Engineering Workshop to be held in the New York area October 19 through 29 has been set, announces Cecil S. Bidlack, NAEB Television Engineer. The program is as follows:

Oct. 19 and 20--Radio Corporation of America, Camden, New Jersey.

Oct. 21 and 22--General Precision Laboratory, Pleasantville, New York.

Oct. 23 (Morning Session)--The DuMont Telecenter (studios) in New York.
(Afternoon Session)--The multiple transmitter location in the Empire State Building where the transmitters of WABD, WABC-TV, and WATV will be visited.

Oct. 23 (Afternoon)--Meeting at the Biltmore Hotel, N.Y.C., with the NAEB officers and Board of Directors.

Oct. 25 (Morning)--A bus will pick up the engineers at the Biltmore Hotel and take them to Clifton, N.J., to visit the DuMont plant where technical sessions will be held.

Oct. 26--Visits to the studios of the Columbia Broadcasting System and, tentatively, to the studios of the National Broadcasting Company.

Oct. 27--Opening day of the NAEB Annual Convention, Biltmore Hotel.
11:30 a.m.--Lunch at the United Nations Headquarters
12:45 p.m.--Tour of UN Radio and Television Communications facilities.

Oct. 28 (Morning)--Convention Session.
12:30 p.m.--Luncheon with radio and television executives. Speaker to be Rosel Hyde, Chairman of the FCC. Members of the FCC staff have been invited and there will be opportunity for the engineers to meet and talk to them.
(Afternoon)--Technical workshop session at WNYC studios. Clarence La Bel, president of Audio Devices, Inc. will speak and present a demonstration on tape recording including recorder frequency characteristics and distortion testing.

Oct. 29 (Morning)--Convention Session.
(Afternoon)--1. A color TV demonstration at NBC.
2. A TV rehearsal at CBS--Use of cameras and lighting.

ONE-DAY MEETING FOR REGION III ENGINEERS HELD AT WBEZ

WBEZ, Board of Education station in Chicago, was host to engineers from NAEB Region III members on June 10. The meeting was under the auspices of the NAEB Region III, Paul B. Rickard, Director of Radio-TV at Wayne University and Director for the region, and the Engineering Staff of the Division of Radio and TV, Chicago Public Schools, George Jennings, Director, and E. H. Andresen, Chief Engineer.

In the morning session, at the LaSalle Street studios of WBEZ, Mr. Andresen demonstrated several pieces of broadcasting equipment which have been found useful in the Chicago Public Schools. Since equipment is always of prime importance to a public school or university station, considerable time was spent on this and the good features of each item were pointed out. A tour of the studios and control rooms completed the morning session.

In the afternoon, a closed-circuit television demonstration, using both Orthicon and Vidicon cameras, was set up at the Adams Street studios of WBEZ. There was discussion concerning the value and place of closed-circuit equipment in school situations. Ross Utter, chief engineer of the Zenith Radio Corporation, presented many useful suggestions about maintenance procedures. Cornelius McCarthy, of the WBEZ engineering staff, told about tape-recording problems; and John Lopatka, also of WBEZ, talked on master antennae for TV and FM reception. Mr. Lopatka also discussed a master antenna system devised by WBEZ engineers which is less expensive than any system available commercially. The balance of the afternoon was given over to a question-and-answer period, and the engineers closed the session at 5:30 p.m.

Those who attended were unanimous in feeling that such a meeting was helpful and might well be continued on an annual or semiannual basis.

WCET, CINCINNATI EDUCATIONAL TV STATION NOW ON

Cincinnati's educational television station, on channel 48, Station WCET, went on the air July 26 with a regular schedule of 15 hours of educational telecasting per week. The station will be on Monday through Friday. According to an engineering check, the WCET signal will cover most of the Greater Cincinnati area.

The station went on the air with a test pattern on June 29. Studios are at the Cincinnati College of Music. Manager of the new educational TV station is Uberto T. Neely and Robert Huber is program director.

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WOSU-TV, Columbus, Ohio, (Ch. 34, educational), expects to have building plans ready in a few weeks, after which the State will ask for bids. But no target will be set until contract has been awarded.

NAEB INAUGURATES AN ENGINEERING SERVICE

When Cecil S. Bidlack reported at NAEB Headquarters in Urbana, July 1, he became its first Television Engineer and thus inaugurated an engineering service to its members.

This new engineering position was made possible by a grant to the NAEB from the Fund for Adult Education. In a letter to President Ausmus, Miss Martha C. Howard, a member of the FAE staff, expressed the hope that the grant "would enable the National Association of Educational Broadcasters to plan sufficiently far in advance to render an engineering service of the highest caliber to the developing educational television stations of the country."

Mr. Bidlack has been a member of the radio staff (WTAM) and a technical director on the television engineering staff (WNBK) of the National Broadcasting Company in Cleveland. He has been actively engaged in television work since May of 1948 when he went to NBC in New York for television training. In New York, he participated in studio and field television operations including the 1948 political conventions in Philadelphia.

He is not new in the educational field having been Technical Supervisor of WOSU, the Ohio State University station, for eleven years prior to moving to Cleveland in 1938. He graduated with an Electrical Engineering degree from Ohio State University.

One of Bidlack's first duties was a trip to the New York area to complete arrangements for the NAEB Television Engineering Workshop to be held October 19 to 27 inclusive. The NAEB Engineering Committee has selected and notified all successful applicants for this workshop. Their names are listed elsewhere in this month's Newsletter. (See the August Newsletter for Workshop details.)

While on this trip east, Bidlack visited WGBH and the upcoming WGBH-TV. He went over studio plans in detail with Hartford Gunn, Jr., Assistant Manager for Operations who reports a number of Bidlack's suggestions were passed on to the architects.

He also visited WQED in Pittsburgh on the return trip to observe facilities and operation there. On August 12, he met in an advisory capacity with a sub-committee of the Iowa Joint Committee for Educational Television to help work out a "minimum package" for educational television in Iowa. On this trip he inspected facilities of WSUI, and the State University of Iowa closed circuit TV studio at Iowa City; WOI-TV and WOI at Ames, Iowa; and the facilities of WHA-TV and WHA in Madison, Wisconsin.

Requests for information on film scanning equipment from the University of Alabama, and for data on studio switching systems from WKAR-TV at Michigan State College have been received and information supplied in spite of the fact that the TV engineering reference material is building up slowly.

On August 27, Bidlack appeared on the program of the NAEB Production Workshop at East Lansing. His topic, "What the Educational Producer Should Know about Television Engineering." He also visited WKAR-TV and WCET in Cincinnati to observe operation and see their facilities.

WOSU-TV has requested Bidlack's services for staff training when it is ready to go on the air late this fall.

The above will give some idea of the scope of the NAEB Engineering Service to date. It was established to serve educational television in general and NAEB members in particular. To be helpful, we must know how or along what lines you need help. That is one reason Bidlack is visiting educational television stations now on the air. Data on technical facilities of existing educational TV stations is being compiled and will be distributed on request. He has plans to conduct a survey of engineering department salaries, working conditions, etc. of member stations. He will use the Newsletter to provide technical tips which may be helpful. Let him know how he can serve you.

NAEB NAMES PARTICIPANTS IN TV ENGINEERING WORKSHOP

Twenty-six persons were named by the NAEB Engineering Committee as participants in the NAEB Television Engineering Workshop to be held in the New York Area October 19 through 27. During the Workshop the participants will visit the Radio Corporation of America, DuMont, and General Precision Laboratories in the area in addition to various discussions and demonstration of television equipment.

Those named to the Television Engineering Workshop are:

Lawrence Anderson, University of Wisconsin
William Gordon Benson, Station KUOM, University of Minnesota
James H. Bonney, Station WBUR, Boston University
Lawrence A. Brogger, Station KUOM, University of Minnesota
A. J. Boggioni, Station WOSU, Ohio State University
Cyril M. Braum, JCET, Washington 6, D. C.
John R. Brugger, Station WILL, University of Illinois
Charles W. Brooke, Jr., Station WQED-TV, Pittsburgh, Pa.
K. Winston Bugg, Station WABE, Atlanta Board of Education
Gerard Colliot, Radiodiffusion Francaise
Harold D. Gorsuch, Station WOSU, Ohio State University
Charles E. Houston, Texas Technological College
Lawrence A. Larson, Station KUOM, University of Minnesota
Prof. E. M. Lonsdale, State University of Iowa
Carl Menzer, Station WSUI, State University of Iowa
Guy H. Peden, Jr., Station WOSU, Ohio State University
C. D. Phillips, State University of Iowa
Walter Rechenberg, Jr., Station WQED-TV, Pittsburgh, Pa.
Frederick M. Remley, Jr., University of Michigan
Robert Schlorff, Station WDET, Wayne University
W. Worcester Smith, University of Massachusetts
Joseph E. Stuckey, Station WUOA, University of Alabama
Ralph R. Townsley, Station WBAA, Purdue University
Johnny F. Wahlfeldt, Television and Motion Pictures, Univ. of Illinois
Gordon Ward, Station WDTR, Detroit Board of Education
Noyes W. Willett, Radio House, University of Texas

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RCA has developed a wireless lapel microphone which Jack Lescoulie demonstrated on the NBC "Today" show recently. It is expected the new mikes will be in production before the end of the year.

TV TECHNICAL TIPS NO. 1

by

Cecil S. Bidlack, NAEB TV Engineer

Why do images "stick" on image orthicon tubes? Can proper operation of the orth minimize this sticking? These two questions are answered in a paper presented at the Eighth NARTB Broadcast Engineering Conference in Chicago May 27, 1954 by R. G. Neuhauser, camera tube engineer for the RCA Tube Division, Lancaster, Pa.

When you pay $1200.00 for a 5820 image orthicon there are two things you as a TV engineer are interested in getting from it. The first is a high quality picture and the second is a long life which is easily translated into low operating cost. Neuhauser states that operating conditions which give the best picture are the same as those that give the tube longest life in normal operation. RCA has printed this talk in Publication No. ST-893 and it should be MUST reading for every video control engineer. The title of the paper is "Optimum Performance of Image Orthicons and Vidicons in Broadcast Service." If you would like to have a copy of this paper, drop a note to the NAEB Television Engineer and he will secure a copy for you.

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Linn Towsley, Chief Engineer for WKAR-TV, is installing a new studio switching system and a master B plus power supply system manufactured by General Communications of Fort Atkinson, Wisconsin. Other stations may be interested in considering a master power supply for regulated B Plus voltage, rather than using individual power supplies as is done in much current practice. The master supplies are available in 2, 10, and 50 ampere capacities at 360 volts with which individual voltage regulators are used. Advantages claimed are the elimination of large numbers of individual heat producing supplies, conservation of rack space, low maintenance and operating cost, and low initial cost.

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By the time this Newsletter reaches you this item will not be timely. However, it illustrates a point. RCA is advertising a "Sale" of certain items of television equipment and if you happened to be in the market for the items mentioned substantial savings could be had. For instance, a TG-10A Sync Generator (field type) with a regular price of $3750.00 was offered at $2000.00; a TS-30B Field Switcher at $1339.00 marked down from $2200.00. If we had a well polished crystal ball and knew what you needed we could pass such information on to you and you might take advantage of such offerings. Perhaps you have surplus equipment, sounds crazy doesn't it, that some other educational station could use. If so you would be able to realize something from it and the station needing it would be willing to pay a fair price and both would benefit.

Recently we had a request from Graydon Ausmus of the University of Alabama, Station WUOA, for a side mount 6 or 8 bay FM antenna (Collins or Andrews). Possibly you have one he could use. A local phone call to John Brugger of WILL disclosed that they have a Federal 8 Bay antenna for 93.3 mc that they were willing to dispose of at a very reasonable price. Obviously we couldn't call all NAEB

members to ask if they had a surplus FM antenna to take care of the WUOA request. However we can make use of NAEB and the Newsletter to make availabilities and wants known to all members. Why not try it?

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Setchell Carlson, Inc., New Brighton, St. Paul 12, Minnesota, manufactures a 17 inch television monitor, Model K56, which sells for $199 less audio or $214 with audio. It features unit construction with the main power supply permanently attached to the main chassis and three plug-in units: 1) Horizontal oscillator and high-voltage section, 2) Video amplifier, sync separator and sync control amplifier, 3) Vertical oscillator and output and audio amplifier, if desired. It is enclosed in a gray metallic finished plywood cabinet and uses a 17KP4 picture tube. Audio output is 1.7 watts at 400 cycles at less than 10% distortion. These monitors are being used at KUOM and WHA-TV in case you want opinions of their suitability.

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Weston Electrical Instrument Co., Newark 5, N.J., makes a TV studio Lightmeter Model 915 TV which lists at $44.00. It has two ranges 0-300 foot candles for normal lighting for black and white TV and a range of 0-1500 foot candles for the higher illumination levels required in color TV. It is an incident light meter whose acceptance angle exceeds 180 degrees.

FROM THE FCC

The 31st and 32nd construction permits for educational television stations were granted recently by the Federal Communications Commission. The CP's went to the Detroit Educational Television Foundation and the Oklahoma Educational Television Authority respectively. The Oklahoma CP is for a station in Tulsa on Channel 11. The Oklahoma ETV Authority has been previously granted a CP for a Channel 13 outlet at Oklahoma City.

The Michigan State Board of Agriculture has asked the FCC to designate commercial VHF Channel 10, assigned to Parma-Onandaga, Mich., as a non-commercial educational channel in connection with a proposed channel and location switch for WKAR-TV. WKAR-TV now operates non-commercial on UHF Channel 60 at East Lansing.

The Alabama Educational Television Commission has applied to the FCC for an educational, non-commercial TV station on Channel 10 at Birmingham, Ala.

ENGINEERING WORKSHOP ROSTER COMPLETE

Twenty-six engineers will be attending the NAEB Television Engineering Workshop in the New York area October 19-27. Of this group, three are from educational TV stations now on the air, ten are from stations having construction permits, seven are from institutions having closed circuit TV installations, and four are active in helping plan details of educational stations and networks.

The workshop is given an international flavor by the attendance of Gerard Colliot of Radiodiffusion-Television Francaise. Last October M. Colliot was chosen for a year's study in the United States under the Work Study Training for Productivity Program (WSTP) sponsored by the Foreign Operations Administration (FOA) of the U. S. Government and the French Government. He will return to France at the conclusion of the workshop.

CONSTRUCTION BEGINS ON NEW KETC BUILDING

Plans for KETC's (Channel 9, St. Louis) permanent studios and offices at the corner of Big Bend and Millbrook Blvds., have been approved and construction is now underway, Dr. Arthur H. Compton, chairman of the St. Louis Educational Television Commission and former Chancellor of Washington University announced. KETC went on the air from temporary studios located in McMillan Hall at Washington University on September 21.

Contributed by Arthur B. Baer, president of Stix, Baer & Fuller department store, St. Louis, the new building will be known as The Julius and Freda Baer Memorial, in honor of Baer's parents. It will be erected at a cost of about $185,000 on land made available by Washington University and is scheduled to be completed before the first of the year.

The 14,000 square-foot building, designed for television operations, includes a large studio, scenery storage room, sceneery shop, offices, control room, kinescope recording room and film rooms. Dr. Compton explained that the office and studio sections of the new building will be of welded steel frame construction. The studio exterior will be of insulated paneling while the office exterior will be a combination of brick veneer and insulated panels. The steel and insulated panel construction of the studio section is being utilized because of its internal flexibility and adaptability for expansion. Also, it can be erected speedily and its cost is low.

Ownership of the studio building will be retained by Washington University. It will be leased to the St. Louis Educational Television Commission, operator of the community-sponsored station KETC, for 20 years at $1 per year.

TV NEWS BRIEFS

The FCC has approved a proposal under which commercial TV station KOLN in Lincoln, Nebraska, will move from VHF Channel 12 to VHF Channel 10, and will turn Channel 12, together with its operating equipment, over to a Trustee who will make it available for use by the University of Nebraska as a non-commercial educational station. Under the proposal, the Trustee agrees to sell the present Channel 12 broadcasting facility to the University for $100,000 up to July 1, 1956, if the University desires to buy.

The FCC added TV Channel 79 to the assignments at Toledo, Ohio. The action gives Toledo three commercial channels and one educational reservation.

NEW OSU BUILDINGS GIVEN OK

Trustees of the Ohio State University have approved a giant building program. It features a $2,500,000 campus auditorium, five 11-story dormitories, a new research laboratory, television station and classroom building. The television station and lab are estimated to cost $200,000 each.

KTHE, LOS ANGELES SUSPENDS OPERATION

KTHE (TV) Los Angeles, second U.S. educational TV and first Los Angeles area UHF station, suspended operation on September 15. The University Department of Telecommunications will continue use of station facilities for instruction and research but programs will not be telecast. The reason for the suspension was lack of funds.

TV TECHNICAL TIPS NO. 2

Cecil S. Bidlack
NAEB TV Engineer

If Educational Television is to build the audience it deserves, staff members of the individual stations must be super critical not only of program content and production but of the technical aspects of its operation as well. Contributing to the popularity of the educational radio station was the fact that there were no commercials, the programs included considerable good music, both classical and popular, and the technical standards of the station could be maintained fairly easily. Because of its complex nature, a good educational television program will be achieved only if careful attention is given to details of program, production, and engineering.

On the program side, educational television cannot hope to compete on a popularity basis with the network extravaganzas whose single program budget would run the educational station for a year. However there is enough sameness in commercial programming so that educational stations can appeal to those discriminating people who are tired of variety shows, hard luck stories, and often-repeated movies. On the production side, we can compete, especially at the local level, with other stations in the community. Engineering-wise we are in direct competition . Good picture quality and operating practices are a big help to program and production in putting their output across to the public.

First let's talk about television audio. Everyone concentrates on the picture and audio is only incidental to those just starting in television production. As a check on your audio quality turn the picture off and listen critically to TV audio in a quiet room. You'll be amazed at the things you can hear. Most control rooms are noisy--there's air conditioning noise, blower noise and conversation. No wonder we are not aware of studio noises made by talent, the shifting of props, and the shuffling of the cameramen's feet as they dolly in and out, or the noise of the floor man whipping his PL cable to get more slack. If you add to this no sound treatment in the studio, a faulty boom mike suspension, and no effort to talk the boom mike into a proper position, (as low as possible and out in front of the performer) you are operating near the point where reflected sound entering the microphone almost equals the direct sound pick up. These conditions are not dreamed up--they were actually observed by the writer recently at at least one educational TV station.

We should be continuously striving for the best in picture quality. How can you judge picture quality on poor monitors? Yet I have seen a station where the only satisfactory monitors operating with good contrast were the two field type camera controls with seven inch kinescopes.

Good focus is one of the fundamentals of a good picture. You can have everything else right; but if the picture is soft, it's a poor picture. Personally I can't enjoy a movie due to my television experience since I am constantly mentally trying to sharpen the focus. And many times it isn't my imagination. I have observed a test pattern on the air which looked soft, yet when I asked the video engineer if they checked focus on the test pattern slide, he assured me it wasn't necessary, since the slide projector had been focused. Yet when I focused the projector the

resolution increased at least 100 lines. No wonder their film programs looked soft.

How's your linearity? Are your circles round? I know it is difficult to preserve proper aspect ratio on video monitors, but blanking widths are specified by the FCC. If your horizontal blanking is a little narrow, and your vertical blanking a little wide, then you will have poor linearity on your transmitted picture and your aspect ratio will be incorrect regardless of live camera alignment on test pattern.

There's another place where we can pay attention to details. Proper camera expansion with slight "corners" showing on the air are the mark of a good video engineer. They are masked out on most sets--but how else can you determine if deflection has drifted if you do not show "corners." And in showing them you are using maximum target area which will give you maximum resolution. Time should be allotted just prior to air time for a final check of live cameras on test pattern. How much you should allow depends upon the skill of your cameramen and video engineer. At least 15 minutes should be allowed for two live cameras with experienced men. If they can do it faster, well and good; however, it's a good thing to have a short break before going on the air.

When you put the cameras on test pattern, use the standard 18 x 24 inch pattern and not one cut from a magazine. And use at least a 90 mm. lens on camera for the job, with the pattern mounted on a good stand and its center at lens height. A line normal to the center of the test pattern should run through the optical center of the lens. If you need a standard size test pattern, a note to the NAEB Television Engineer will bring you one by return mail.

Good lighting is important too. The eye has an automatic iris which adjusts with variations in light level. For this reason it's quite difficult to light a set properly by eye. Incident light meters are not expensive. With reasonable care they'll last indefinitely. How else can you know how much light there is on a set and how do you determine the proper ratio of back light to front light without a meter? Lighting isn't a very glamorous job, in fact it's usually hard, dirty work but good lighting makes a world of difference in picture quality.

These are just a few details that cannot be neglected if you are to produce a good television signal. Perhaps you think they're not important. But if you're a critical viewer (and who isn't if you're in the business) you'll agree that it is attention to the multitude of small details of programming, production and engineering that adds up to make a good television production.

WUOA BEGINS SIXTH YEAR

WUOA-FM "The Voice of the University of Alabama," will begin its sixth year of educational broadcasting in December with increased power of approximately 16,000 watts. The increase from 4,800 watts will triple the station's present coverage area and provide for the first time coverage of the metropolitan areas of Birmingham and Montgomery, Alabama.

University approval of the power expansion was one result of a recent listener-response campaign conducted by WUOA staffers. Graydon Ausmus, WUOA manager and director of the University Radio and Television Broadcasting Services, reported that a six-bay FM antenna has been purchased and will be side mounted on a new 200 foot tower now under construction. The present WUOA radio tower is 100 feet.

TV TECHNICAL TIPS NO. 3

Cecil S. Bidlack
NAEB TV Engineer

Deadline for the December Newsletter has been moved up to permit ye Editor, Miss Rosaline Biason, to bask in the sun in Arizona and caught ye TV Engineer with his typewriter down, so it looks like TV tips will turn into a gossip column for this issue.

The NAEB TV Engineering Workshop has passed into history and until all the returns are in, only the biased opinion of the writer can be given as to its success. From the attendance standpoint it was a huge success, with 100% attendance at all sessions except for the day Al Boggioni of WOSU was confined to the hotel with a bug he picked up in the big city. The 8:15 A.M. New York Central train to Pleasantville on October 21 and 22 looked like an NAEB Special and on Friday (22) NAEB Executive Director Dr. Harry J. Skornia attended the morning session at the General Precision Laboratory plant in Ossining.

We have received many compliments on the Workshop and with much discussion of the conduct of future workshops are inclined to believe that it was a success. As a first experience, we learned a great deal about running a workshop and are anxiously awaiting the critical comments of the individual members of the group to guide us in the future.

The Sunday meeting at the Biltmore with the Officers and Directors of NAEB was a huge success and I was very happy that the opportunity had been provided for the engineers to express their views and was very much pleased that so many took advantage of the opportunity. Our Wednesday morning roundtable also was a good session and in future workshops more time will be allotted to just such sessions as this since the exchange of ideas seems to be one of the most valuable by-products of a workshop.

The Radio Corporation of America, General Precision Laboratory, Allen, B. DuMont Laboratory, National Broadcasting Company, and Columbia Broadcasting System were excellent hosts and the wan looking engineers arriving in Philadelphia on October 18 left New York at the end of the workshop with their cheeks filled out and belts at least one notch larger. Where did you put all that food? As Gleason says, "You're a goooood crowd," and I'm sure it was with a bit of regret that we had to leave it all and return to the routine of our respective jobs.

Last week I expected a flurry of reports with their accompanying expense accounts; but as of this date, only about a third of the reports of individual members are in. We have placed those expense checks in the mail.

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NAEB Headquarters is on the move! That is, the office at 14 Gregory Hall has been rearranged. The cause of the great upheaval was the purchase of a mimeograph machine. Only Secretary Winifred Coatney stayed put, with the rest of us "checkers" being shifted about with great aplomb by Harold Hill. The object of it all is greater efficiency. Dr. Skornia, Hill, and myself are now in the "executive suite" (a corner of the big room behind a row of filing cabinets) with

Winifred, Cathryn, Roz, Bob and Joanne gracing the south half of the room nearer the entrance door. Our telephone system is being revised with a more flexible arrangement where all phones will have all lines available.

The boys in the back room, Glenn Blackburn, Don Weber and our part-time duplicators, Patricia Gerrity and Jerry Rosenwasser remained unmoved by it all and our Network Manager, John Holt, blissfully auditioned new network programs surrounded by reels and reels of tape in the former photographic laboratory light trap that serves as his office

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Our Engineering Secretary, Miss Cathryn Polanka, is wearing a diamond on the ring finger of her left hand. The lucky man is John Reed, a junior at the University of Illinois in the Division of Special Services, who is studying Personnel Management. The wedding is tentatively set for late December.

WGBH-TV RECEIVES MICROWAVE RELAY GIFT FROM RAYTHEON

An invisible electronic link between WGBH-TV studios in Cambridge and its transmitter on Great Blue Hill, 10 miles away, has just been donated by the Raytheon Manufacturing Company of Waltham, Mass. Charles F. Adams, Jr., president of Raytheon, presented the gift, which was announced by Ralph Lowell, trustee of the Lowell Institute and president of the WGBH Educational Foundation.

Mr. Lowell also reported that WGBH-TV engineers already are preparing to install the new microwave relay equipment, the KTR-100, on the roof of the station studios at 84 Massachusetts Avenue, opposite M. I. T. "We deeply appreciate this generous gift from Raytheon," Mr. Lowell said. "It is an indispensable part of our educational TV station, and will contribute greatly to the efficient and faithful reproduction of WGBH-TV programs in the homes of New England viewers."

The KTR-100 is a small microwave relay which picks up the sound and picture recorded by television cameras and microphones, and flings both through the atmosphere at the same time without wires or cables. This electronic pathway from WGBH-TV studios extends south to Great Blue Hill.

Although the KTR-100 is light enough to carry by hand in its metal "suitcases," it will be mounted permanently on a steel pedestal above WGBH-TV studios. The sight and sound are transmitted and received at each end of the 10-mile path by a four-foot "dish" or aluminum reflector. The transmission from studio to transmitter cannot be interrupted by hurricanes or ice storms. After a program has been received by the "dish" on Great Blue Hill, it is then sent out through the WGBH-TV transmitter over its 849 foot high antenna.

ERECTION OF WGBH-TV TOWER AND ANTENNA

"Erection of the WGBH-TV, Channel 2, tower and antenna began in late October," announced Ralph Lowell, Trustee of the Lowell Institute and President of the WGBH Educational Foundation. WGBH-TV tower, which is located on the summit of Great Blue Hill, Milton Massachusetts, was custom built by Lehigh Structural Steel Company, and designed to withstand a wind velocity of 135 m.p.h. Steel anchor bolts pin the four legs of the self-supporting tower deep into the granite of Great Blue Hill. Florence Stove Company, Kankakee, Illinois, manufactured the antenna pole, which along with the six bays of the RCA antenna weighs 22,000 pounds, heaviest of any Boston TV station antennas.

DETROIT EDUCATIONAL TV STATION BECOMES A REALITY

The Board of Education has given the green light to educational television in Detroit with the appropriation of $104,000 to install studios at Wayne University and at the Detroit Public School Radio Station WDTR.

Wayne will spend $75,000 converting its Old Main auditorium, until recently occupied by the library, while WDTR will use $29,000 to alter its radio studios for TV presentation. A third studio will be built by the University of Detroit.

All three studios will be used by the 18 cultural and educational groups who are members of the Detroit Educational Television Foundation, sponsors of the non-profit, non-commercial UHF station. The Foundation has raised nearly $400,000 from private sources which will be used to build a 500-foot tower and purchase a transmitter, television cameras, kinescope and allied equipment.

MEMPHIS ETV RECEIVES GIFTS FROM INTERNATIONAL HARVESTER AND WHBQ-TV

International Harvester Foundation has given $1000 to the Memphis Community Television Foundation on behalf of International Harvester's five Memphis operations. In an accompanying letter, R. G. Mahal, works manager at IH, said in part, "We firmly believe that an educational television station will be of inestimable value to the community. We believe it will benefit our company indirectly by raising the educational and cultural standards of the community. We believe it will benefit our company directly by offering self-improvement opportunities to our employees and their families and by enriching their home lives. We are making this contribution because we feel we should have a part in bringing community educational television to Memphis."

A donation of $30,000 worth of television equipment was made to the Memphis ETV foundation by WHBQ-TV, bringing to well over $100,000 the grants made to the community TV station by the two commercial outlets in Memphis. The gift was announced by John Cleghorn, general manager of WHBQ and WHBQ-TV and a director of General Teleradio, Inc., which controls the two stations.

Channel 10, licensed to the Memphis Community Television Foundation, will be the Mid-South's first cultural and educational TV station. It is planned to operate the station through public subscriptions. Channel 10 has already received equipment valued at $78,500 from WMCT, The Commercial Appeal television station. With the gift from WHBQ-TV, it now holds equipment valued at $108,500.

FRACTURED VIDEO

FILM CLIP: Practice of bilking television stations with inferior movies.
FLIP BOARD: Informal society of sales personnel; name derives from expression: "Let's flip for the coffee."
I.D.: Abbreviation for intestinal disorder; i.e., ulcer.
I.D. CARD: Employee who jokes about ulcers.
LAP DISSOLVE: Instruction to seated actor; as "Get up."
MIKE SHADOW: Affectionate name for TV detective.
TELEPROMPTER: Viewer who notifies the advertiser when somebody goofs.
TIGHT CLOSEUP: Refers to performer who appears crocked at close range.
PANNING: Objective appraisal of TV program by radio personnel.

TV TECHNICAL TIPS NO. 4
by
Cecil S. Bidlack, NAEB TV Engineer

The NAEB Engineering Committee met at the Hotel Sherman in Chicago on Friday, December 17. Present were Chairman Carl Menzer of WSUI, Bob Higgy of WOSU, Bert Holmberg of KUOM, John Brugger of WILL, Keith Ketcham of WOI and WOI-TV, and myself. Cy Braum of JCET was present as a guest. Ed Kratt of WNYE could not be present. The meeting had a two-fold purpose:1) to decide on future technical workshops, and 2) to plan methods of carrying out a professional recognition and advancement program for technical personnel.

The Committee has decided to ask for suggestions in planning the TV Engineering Workshop for 1955. It is believed that the proper place to hold the next workshop is at an educational television station during the first two weeks of September. Subject to final approval of funds, the workshop will last five days and will be conducted on an advanced level with the participants limited to those with previous television experience. These will be people in key positions in TV organizations, such as the chief engineer or kinescope recorder operator who would be able to derive the maximum from the instruction given and return to their home stations and pass the information on to the remainder of their staffs.

The Engineering Committee would appreciate your suggestions on the program of the workshop. Send them to Carl Menzer, WSUI, State University of Iowa, Iowa City.

In order to accomplish the second objective as listed above, the Committee must first know who these people are. It directed the NAEB TV Engineer to begin the preparation of a roster of Technical Personnel in Educational Television and Radio. This will be no easy task, but with the Research Committee, which is now working on a "Who's Who in NAEB," and the cooperation of the membership, we should be able to come up with the desired information. There also seems to be a demand for an Engineering Newsletter or a supplement to the regular NAEB Newsletter which would go directly to the Engineering Department instead of a file basket and then to the waste basket. The idea of an Engineering Newsletter was also suggested at the NAEB TV Engineering Workshop held in October. It is believed that it could play a vital part in the exchange of technical information and ideas. Contributions from members would be gratefully accepted.

There was also much discussion of an NAEB Engineering Handbook, with sentiment somewhat divided as to the need for same. Perhaps the readers of this column might have some ideas on the subject, if so please send them along.

Many other items were discussed during the day, including engineering salary scales and job classifications. Other topics covered the NAEB Network, the possibility of forming an FM network, tape quality, standards for audio and video recording, and the possibility of holding state or regional meetings. The work of the NAEB TV Engineer was also discussed with Committee sentiment being that he should serve as a clearing house for information and in an advisory capacity rather than offer services in direct competition with consulting radio and television engineers.

It was good to get together. By carrying out the ideas submitted at this meeting during 1955, the Engineering Committee will remain one of the most active in the NAEB.

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NAEB Executive Director Harry J. Skornia and your TV Engineer "hit the road" together for nine days begining November 29. They made a "great circle" tour with stops at KUHT in Houston, FAE Headquarters at Pasadena, KTHE in Los Angles, KQED and the AVA Convention at San Francisco, KPFA in Berkeley and KCTS and KUOW in Seattle. It was a flying trip but we were able to see, hear, and watch at close range, the actual programming and operation of some of our NAEB member stations.

Training of program, production,and engineering personnel is an integral part of the operation of KUHT, KQED, and KCTS. While it may have disadvantages, it is one way out of that bugaboo of the high operating cost associated with television programming. In Houston, students at the University man all studio operating positions except for a video control engineer. The KUHT transmitter is manned by full-time staff engineers. In San Francisco, students at the John O'Connell Vocational School where their main live studio is located operate the studio equipment as a part of their training, while the transmitter is manned by full-time employees. In Seattle, at KCTS, the transmitter is located at the Edison Technical School. It was modified for Channel 9 and is operated and maintained by Edison students under the supervision of Nick Foster, in charge of Radio and Television Training. At the studio, on the University of Washington campus, all operating positions are covered by students. However, Chief Engineer John Boor, or his assistant, line up and expand the cameras and then supervise the video operation.

Rotation and the constant changing of personnel are the most obvious disadvantages of the training type of operation. Does the training pay off? Just ask John Schwarzwalder of KUHT who lost fourteen of his students in one fell swoop when a new commercial station opened in Houston and was staffed with his students. The going was rough for a while but the operation continued with the new group taking over and rapidly acquiring the necessary polish under operating pressure. And don't think the pressure isn't there. KUHT sometimes does twelve live shows back to back in a 24 by 30 foot studio.

KCTS was well under way towards rebuilding and rewiring their studio control room after a fire which destroyed their control room equipment on November 19. Fortunately the equipment loss was covered by insurance but the sub-floor had to be replaced and all wiring had to be torn out and replaced. Damage was confined to the control room. The field type cameras, camera controls and power supplies had been set up in the studio and were not touched by the flames. They put their first live studio program on the air December 7. Regular programming begins the first week in January.

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Two features not previously seen in TV studios were observed at KCTS in Seattle--trolley ducts and a scenery track.

The trolley duct is manufactured by Trumbull Electric and consists of a metal duct approximately five feet long mounted on the ceiling and open towards the floor which contains two enclosed bus bars one for each side of the AC line. Wattage of each section of duct is 5 kw and three flat connectors may be inserted anywhere along the length of the duct by compressing the spring clips on the connector. Internal brushes make contact with the bus bars when the clips are released. This arrangement is a very flexible one since the clips may be plugged in anywhere along the five foot strip; it also saves cable and the necessity for handling long length of light cable and thus speeds up lighting. It also allowed KCTS to install smaller power circuit capacity and benefit from a lower rate since the electrical code required them to install sufficient capacity to supply full power to every electrical outlet.

The scenery track is the variety used for sliding closet doors used in homes and is manufactured by the Washington Steel Products Company of Tacoma, Washington. KCTS installed theirs in 20 foot lengths running completely around the studio. Their flats were hung from the tracks to within an inch of the floor so that merely by rolling the proper flats in place four back drops may be used for a given lighted area. It is believed that this sytem will save considerable studio space and make scene shifts much easier and practically effortless. The nylon wheels on the tracks are camparatively quiet in operation.

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Congratulations to K. Winston Bugg of WABE, Atlanta, Georgia, who was transferred to the Senior Member Grade in the Institute of Radio Engineers.

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Your NAEB TV Engineer has been elected to Active Membership in the Society of Motion Picture and Television Engineers.

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Congratulations, too, to Mr. and Mrs. Lawrence C. Anderson of WHA-TV whose 7 lb. 3 oz. baby daughter very conveniently waited to arrive until her father returned home from the NAEB TV Engineering Workshop.

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NAEB Staffers, husbands, and wives, got together with 100% attendance at a Christmas Party at the Bidlack's on December 16. The Skornias, Hills, and Bidlacks were co-hosts for the affair. Some very novel gifts were features of the gift exchange. NAEB Engineering secretary Cathryn Polanka and her fiance John Reed were presented with the gift of a spice set in honor of their approaching marriage December 26. NAEB President Frank Schooley and Mrs. Schooley were also there.

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An engineer's dream of a ONE MILLION WATT television station is now a reality with the installation of a new RCA UHF transmitter for WBRE-TV (Channel 28) at Wilkes-Barre, Pennsylvania. In another month, G.E. will install its first megawatt transmitter at WILK-TV (Channel 34) also in Wilkes-Barre. Thus Wilkes-Barre will become the showcase for the ultimate in TV power and these two installations may do much to strengthen the cause of ultra-high frequency television.

In achieving the goal of one million watts, RCA and G.E. use slightly different approaches, although both use their 12 kw transmitters as building blocks. RCA modifies two of its 12½ kw transmitters to get 25 kw power, feeds the output into an antenna with a gain of 46, using conventional beam tetrode tubes in the output stage. G.E. gets its 45 kw by harnessing three 12 kw units, modified so there are 4 klystron powered visual amplifiers, 2 aural, feeding a conventional 25 gain helical antenna.

RCA's 46 gain antenna is 96 feet long, weighs 7½ tons and will be shipped and hoisted in two sections. G.E. uses its standard 5 bay helical UHF antenna which is 43 feet long and weighs 1½ tons.

--TV Digest

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Planning to shoot color film for television? If so, CBS Television Engineering Department has prepared a small brochure titled "Color Television Film Shooting Practices. It contains recommendations as regards staging, lighting, cameras, film, and last but certainly not least, sound. Write to the CBS TV Engineering Dept., 485 Madison Avenue, New York City, for a copy.

WTTW TO OCCUPY EAST WING OF SCIENCE MUSEUM

A three-year contract has been signed by the Chicago Educational Television Association for space in the Museum of Science and Industry. The Association will set up studios and offices of WTTW in the east wing of the museum. Approximately 13,000 square feet of space has been set aside for two studios, each 60 x 40 feet, a master control room, a film studio and offices of the station. The remainder of the east wing is occupied by the Army. The station also will have access to a theatre in the west wing of the building, which can accommodate large audiences and is equipped with a coaxial cable.

A spring target date has been set for WTTW's first program, with a regular schedule planned for next fall. WTTW will have its own entrance to the east wing for personnel and guests of the station. Museum visitors will reach the station through the main museum entrance. Studios will be glass paneled to provide an exhibit for museum patrons.

ALABAMA MOVES AHEAD WITH STATE-WIDE ETV NETWORK

Alabama is moving steadily toward the establishment of a state-wide educational TV network, with the initial part scheduled to operate by the year's end. Interviews with key officials during a recent tour of the area by National Citizens Committee for Educational Television representatives brought out these facts:

1. A 500-foot tower erected atop Mt. Cheaha, highest point in the state, has been completed. A transmitter has been ordered. Operating at maximum power, the signal from this tower will provide coverage for some 60% of the population of Alabama and will reach well into Georgia.
2. Micro-wave relay units linking Tuscaloosa, Birmingham, and Auburn to Mount Cheaha are being installed.
3. At Tuscaloosa, seat of the University of Alabama, a studio is under construction with all equipment on hand. At Auburn, seat of the Alabama Polytechnic Institute, plans have been approved for another studio and construction is scheduled to begin soon.
4. A series of conferences, clinics, and workshops have stimulated general enthusiasm and concrete program planning on the part of educational institutions and systems throughout a major part of the state.

While the ETV leaders of the State are wary of flat predictions, the present situation indicates that by the end of the year a majority of the state's population will be within range of an ETV transmitter telecasting programs originating from three producing units: the University of Alabama, Alabama Polytechnic Institute, and the Greater Birmingham Educational TV Association, Inc.--comprising the 5 public school systems surrounding Birmingham.

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* EDUCATIONAL STATIONS NOW ON THE AIR *
* Feb. 10, 1955 *
* AM--22 FM--125 TV--11 *
* *
* WUNC-TV Chapel Hill, 1-8-55 *
* WEDM-TV Munford, Ala.,1-7-55 *
* *

TV TECHNICAL TIPS No. 5

by

Cecil S. Bidlack, NAEB TV Engineer

Newsletter deadline time is here again and once more the heading of this column should read "Wanderings of the NAEB TV Engineer" rather than the above. Two weeks out of the office are not very conducive to the preparation of technical tips. However, perhaps by detailing some of my experiences, my readers (if any) may pick up some ideas which might loosely be construed as technical tips.

January 10 and part of January 11 were spent in Memphis at the request of Keith Nighbert. We inspected possible studio and transmitter locations; met with Mr. Julian Bondurant and Mr. Robert Pharr of the Board of Executive Trustees of the Memphis Community Television Foundation to discuss their problems; and made recommendations. We can report optimism that progress is being made towards obtaining what promises to be a source of continuing financial support which, if secured, will permit the Board to obtain studio and transmitter sites, hire a staff, and to realize their long sought goal of seeing educational Channel 10 on the air in Memphis.

Late afternoon of January 11 found us in Tuscaloosa, Ala., where NAEB Past President Graydon Ausmus and WUOA Chief Engineer Joe Stuckey proudly showed us how work was progressing on the remodeling and expansion of their present FM studio facilities for television. Work was well along on the masonry for the second floor. With continued good weather they hope soon to have the addition under roof and the building completed by March 1. The additional space will give them one 38 by 50 foot TV studio, one 14 by 20 foot TV studio, a TV control room, a large shop for the construction of scenery and props, a kinescope recording and processing room, engineering shop, ample office space, dressing rooms as well as space for the FM studios and transmitter. A 200 foot micro-wave tower was already erected, the micro-wave equipment installed in the FM control room, and passive reflector mounted on the tower. The micro-wave dish and transmitter head were on hand, with completion of the installation held up until outside building construction was finished. The WUOA-FM antenna will be side mounted on the micro-wave tower and Stuckey was busy with hack saw, tubing, and blow torch revamping the antenna for their 91.7 mc frequency. The University of Alabama studios will be one of three program originating points for the Alabama Educational TV Network. The Channel 7, Mt. Cheaha (Munford), transmitter went on the air with its first film program on Friday, January 7, 1955. Other transmitters will be located at Birmingham (Channel 10) and Andalusia (Channel 2). Studios will also be located at Birmingham and Auburn (under construction) with future studios planned at Montgomery and Mobile.

Tuesday evening we spent screening kinescopes from the ETRC Center at Ann Arbor. Wednesday morning we drove Graydon to Birmingham to the new building of the Extension Division of the University of Alabama to the office of Rudy Bretz. We brought good luck in the person of the telephone installer who was connecting their phones. Incidentally the number is 53-5602. Chief Engineer James Evans has set up a temporary control room in the outer office with two G.E. camera chains, switcher, and sync generator with a temporary studio in the adjoining building auditorium. The studio is "hot" daily from 3:30 until 5 p.m. during which time Rudy is training a number of people in the many skills required for live studio operation. He is also helping with promotion and publicity. I accompanied

him to the WABT (commercial) studios atop a hill overlooking Birmingham where Rudy appeared as a guest being interviewed on an afternoon TV program. He discussed the programs soon to be seen on Channel 7 in Birmingham from the transmitter on Mt. Cheaha. Incidentally viewers reported good reception of the initial broadcast over a wide area. We did not attempt to visit the transmitter site on Mt. Cheaha since I have been invited to return to Tuscaloosa again. At the time their studio goes on the air we will help them get started and also be checked out with them on their GPL kinescope recorder and film processor. I left Birmingham on the 4 p.m. plane for Raleigh-Durham and Chapel Hill and WUNC-TV.

Thursday morning (13th) Robert F. Schenkkan, Director of Television for the Consolidated University was contacted and soon turned me over to Alan MacIntyre who is Chief Engineer for the entire system. I accompanied Alan to the studio in Swain Hall on the Chapel Hill campus, to the transmitter on Terrell's Mountain in Chatham County eight miles from the campus and to the micro-wave relay station on Cane Creek Mountain. Friday I visited the studio in Raleigh and on Saturday the studios in Greensboro.

North Carolina can truly claim to be the world's first educational television network. It has three live programming studios at Chapel Hill, Raleigh and Greensboro. Its vidicon film chain is located at the transmitter where the switching between studios is accomplished. It has a small bus which has been converted into a mobile unit and which has already been used several times for programs outside the studios. It is programming from 3:30 to 10 p.m. daily and from 6 to 10 p.m. on Saturday and Sunday with a majority of these hours being live programming.

The North Carolina network is completely RCA-equipped. The Raleigh studios at State College are located in a new building designed especially for television. In addition to the 10,050 sq. ft. of studio space and its associated announce booth and control, it has a large scene shop, art studio, dressing rooms, and office space. It is equipped with two RCA studio type cameras and also has a projection room which is not equipped. In Greensboro, studio facilities are located on the campus of Woman's College where a laundry building has been remodeled to give a 11,210 sq. ft. studio plus all the other necessary television facilities. It, too, is equipped with two RCA studio type cameras and has an unequipped projection room. In Chapel Hill, Swain Hall as been remodeled from a cafeteria to provide 11,241 sq. ft. of studio space and is equipped with two RCA field type cameras and controls. At present, these are installed in the mobile unit when the occasion demands field use.

The transmitter is an RCA type TT25BL and is located on Terrell's Mountain with an effective radiated power of 100 kw from a six bay RCA antenna rising 798.5 feet above ground. Excellent reports of reception have already been received from many parts of North Carolina and surrounding states. The Chapel Hill and Raleigh studios beam their video and multiplexed audio signals by micro-wave on one hop to the transmitter while the Greensboro studio micro-wave signal is repeated at an unattended relay station at the top of Cane Creek Mountain. Five complete micro-wave units are used, two Raytheon and three Philco units, with audio being multiplexed on the video carrier in the 7000 mc band. At the time of my visit WUNC-TV engineers were working with factory representatives to eliminate video crossover into the audio channel. In addition to the local and long distance telephone system there is a 26 mc radio cue link between studios and transmitter. As I left, MacIntyre was looking for a two-headed engineer with eight arms for the transmitter. Such a beast could easily do the necessary switching between the

four studios, preview the upcoming studio, roll and douse the projector and change slides, touch up tuning on the three micro-wave receivers, and keep the transmitter log.

Monday January 17 was spent in Washington with Cy Braum, engineering consultant for the Joint Committee on Educational Television. Cy is preparing an informative paper on FCC procedures and we spent considerable time at the Broadcast Bureau of the Commission getting some ideas on proof of performance test from TV license applications. Cy and I worked together and cooperated on engineering problems which concern educational television stations. One instance of this cooperation occurred when Dr. Skornia and I were in Seattle. It was Monday morning and KCTS had scheduled and advertised a program for Tuesday evening. However on the previous Friday they had been informed by the FCC that they had not followed the proper procedure to obtain the Special Temporary Authority to conduct program tests. They hurridly submitted the necessary information to the FCC but were afraid the STA might not be received in time for the program to go on. Since we were in Seattle, we were able to bring Cy in on the problem. After Loren Stone explained the situation to him, Cy, in Washington, was able to expedite action. Within a couple of hours the STA was granted, Stone stopped worrying and the program went on as scheduled, thanks to the working together of all agencies concerned.

The Colonial Airlines pilot informed his passengers they were landing in a "snow shower" in Syracuse, Monday evening (17). If five inches of snow is a shower, I'd hate to be there when it really snowed. There were times as we were descending through the shower when the wing tip lights were barely visible. I breathed a sigh of relief when I could see lights on the ground and the landing seemed to be no problem. Tuesday I visited the closed circuit studios at Syracuse University, also their FM station WAER. Had quite a chat with Dr. Eugene S. Foster and Art Weld. They told me that at one time all of the live talent programs on WSYR-TV (a local commercial station) came from the Syracuse University TV studios. With the construction of a live talent studio downtown, the programs originating in the Syracuse University studios were cut back to a one half-hour daily commercial in addition to the regular schedule of educational programs Saturday and Sunday by the University. They took me on a tour of their studio and control room until John Soergel came in. He showed us their new GPL kinescope recording installation and there ensued quite a discussion of the problems of kinescope recording. Soergel requested copies of the NAEB Engineering Committee reports on kinescope recording which he should have by this time. I also met Paul North, Technical Supervisor of WAER and spent some time in his office discussing the problems of radio and television engineers at educational stations.

Wednesday morning (19) I met Jim Grant of the General Electric Company. We first visited the WSYR-TV live studio, then their film studio and master control room. Then we went to the G.E. demonstration studio where Jim gave us a fast run down on the complete G.E. line of studio equipment. Among other things we saw the new G.E. color film and slide scanner under test. Their projector is manufactured by Eastman and is of the continuous motion type. A rotating split circular mirror, whose semicircular segments tilt as they rotate, enables the scanning raster to follow the motion of the frame in the gate of the projector. An f/1.6 optical system is used in order to deliver the maximum amount of light to the dichroic mirrors and photo-electric cells.

We also visited Electronics Park with its assembly lines and test bays. Here we saw equipment in various stages of construction and test from VHF television antennas to the G.E. chromacoder, which is their solution to the problem of the pick-up of live color television. Grant says that each item of television built

by General Electric from a distribution amplifier to a 50 kw television transmitter is tested in its place in a normally functioning television system before being packed for shipment. Friday morning January 21 found me back at my desk in Gregory Hall trying to get back into the swing of office routine.

NEW TV PROJECTOR AVAILABLE

To meet the universal need for equipment with which to project a television image on a screen large enough to be viewed by several hundred people, the Fleetwood Corporation, of Toledo, Ohio, announced recently the immediate availability of its model FL-1001 Television Projector.

Capable of projecting a clear, bright, well defined picture up to 9 foot by 12 foot, this new and completely mobile piece of equipment can be used in individual classrooms for special groups, in large auditoriums to cover the entire student body, PTA organizations, as well as for sales demonstrations and closed circuit conferences. The unit is designed to be used in those places where community watching is the only way large groups can view television programs.

The FL - 1001 is completely self-contained in a functional heavy duty metal cabinet which houses built-in speakers for smaller groups; plug-in facilities for driving remote speakers; a television receiver capable of receiving all channels; and is equipped to receive a television signal direct from network lines.

Power supplies, amplifiers, and video units are mounted on sliding racks, offering immediate accessibility for service. The FL-1001 operates on 110 volt alternating current. Channel selector audio control, and focus regulators have been engineered for simple, easy operation. Overall size of the unit is 24" wide, 36" deep and 48" high; unit has an approximate shipping weight of 400 pounds.

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ALABAMA EDUCATIONAL TV ON THE AIR

The nation's first state-wide ETV network entered its initial stage of active programming when Munford--main link in Alabama's ETV network--started regular telecasting on January 7. The Munford transmitter is connected by micro-wave relays to Birmingham, University, and Auburn, and Andalusia.

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The Federal Communications Commission made final on January 13 its plan to give Michigan five more educational TV channels. This brings to 16 the number assigned to the state.

This makes 257 channels now reserved exclusively for education in the nation.

Scanned from the National Association of Educational Broadcasters Records
at the Wisconsin Historical Society as part of
"Unlocking the Airwaves: Revitalizing an Early Public and Educational Radio Collection."

A collaboration among the Maryland Institute for Technology in the Humanities,
University of Wisconsin-Madison Department of Communication Arts,
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